the desired thrombus removal. In some embodiments, it is desirable for the longitudinal motion of the catheter to be in a distal to proximal direction.

[0136] An alternative or additional embodiment is shown in FIG. **27**. In this embodiment, vessel **400** has a stent **422**. The stent may or may not have been delivered following thrombectomy based on suction. However, thrombectomy catheter **408** is delivered to position catheter tip **410** within the interior of stent **422**. Suction along with suitable movement of the catheter can be used to remove thrombus along the interior of the stent following deployment of the stent. Thus, the thrombectomy catheter can be used to mitigate certain undesired by products of the stent delivery, namely the ultimate formation of emboli.

[0137] Referring to FIG. **19**, heart **430** is depicted with a thrombectomy catheter **432** on guidewire **434** within coronary artery **436**. Thrombectomy catheter **432** can be delivered, for example, using conventional approaches through an incision in the patient's groin or wrist up through arteries to the aorta and into the coronary artery. Referring to FIG. **29**, a carotid endarterectomy is depicted using a thrombectomy catheter **450** introduced into a patient's carotid artery **452** through a hemostatic valve **454** at an incision into the patient's neck. In this less invasive procedure, strokes can be mitigated through the removal of thrombus within the carotid artery.

Distribution and Packaging

[0138] The medical devices described herein are generally packaged in sterile containers for distribution to medical professionals for use. The articles can be sterilized using various approaches, such as electron beam irradiation, gamma irradiation, ultraviolet irradiation, chemical sterilization, and/or the use of sterile manufacturing and packaging procedures. The articles can be labeled, for example with an appropriate date through which the article is expected to remain in fully functional condition. The components can be packaged individually or together.

[0139] Various devices described herein can be packaged together in a kit for convenience. The kit can further include, for example, labeling with instruction for use and/or warnings, such as information specified for inclusion by the Food and Drug administration. Such labeling can be on the outside of the package and/or on separate paper within the package.

[0140] The embodiments above are intended to be illustrative and not limiting. Additional embodiments are within the inventive concepts. Although the present invention has been described with reference to particular embodiments, workers skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention.

What is claimed is:

1. A thrombectomy catheter comprising a suction device, a proximal portion fluidly connected to the suction device, a tubular shaft attached at its proximal end to the proximal portion, and a tip portion at the distal end of the tubular shaft with a continuous suction lumen from the proximal portion to the tip portion wherein the tip portion comprises a suction port in fluid communication with the suction lumen, the tip portion having a first configuration and a second configuration that is curved relative to the first configuration.

2. The thrombectomy catheter of claim 1 wherein the suction device is a syringe.

3. The thrombectomy catheter of claim 1 wherein the tubular shaft has an outer diameter from about 0.26 mm to about 3.0 mm.

4. The thrombectomy catheter of claim 1 wherein the tubular shaft comprises a polymer selected from the group consisting of polyether-amide block co-polymer, nylon (polyamides), polyolefins, polytetrafluoroethylene, polyesters, polyurethanes, polycarbonates, mixtures thereof and copolymers thereof.

5. The thrombectomy catheter of claim 1 wherein the tip portion comprises a polymer selected form the group consisting of polyurethanes, polydimethyl siloxanes, polytetrafluoroethylene and mixtures thereof.

6. The thrombectomy catheter of claim 1 wherein the tip portion comprises one or more radiopaque markers.

7. The thrombectomy catheter of claim 1 further comprising an actuation device that can be actuated to transition the tip portion from the first configuration to the second configuration.

8. The thrombectomy catheter of claim 7 wherein the actuation device comprises a guide structure and the distal portion comprising a guide exit port and a distal guide lumen.

9. The thrombectomy catheter of claim 7 wherein the actuation device comprises an obturator and a wire connected to the obturator.

10. The thrombectomy catheter of claim 7 wherein the actuation device comprises a guide structure with a flexible distal section that is sufficiently flexible that the catheter transitions to the second configuration when the flexible distal section is appropriately aligned with the tip portion

11. The thrombectomy catheter of claim 1 further comprising a guide port to form a rapid exchange segment.

12. The thrombectomy catheter of claim 1 wherein the end of the tip portion tapers to a guide exit port.

13. A thrombectomy catheter comprising a suction device, a proximal portion fluidly connected to the suction device, a tubular shaft attached at its proximal end to the proximal portion, and a tip portion at the distal end of the tubular shaft with a continuous suction lumen from the proximal portion to the tip portion wherein the tip portion comprises a suction port in fluid communication with the suction lumen, the tip portion having a curve to present a displacement from the tip's natural outer diameter of at least about 2 mm.

14. The thrombectomy catheter of claim 13 wherein the tip portion has one curve.

15. The thrombectomy catheter of claim 13 wherein the tip portion has at least two curves.

16. The thrombectomy catheter of claim 13 wherein the suction port is located along one of the curves.

17. The thrombectomy catheter of claim 13 wherein the suction port is located at the distal tip of the catheter.

18. The thrombectomy catheter of claim 13 further comprising a guide port to form a rapid exchange segment.

19. A thrombectomy catheter comprising a suction device, a proximal portion fluidly connected to the suction device, a tubular shaft attached at its proximal end to the proximal portion, and a tip portion at the distal end of the tubular shaft with a continuous suction lumen from the proximal portion to the tip portion wherein the tip portion comprises a suction